

## PATENT COOPERATION TREATY

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE  
 in its capacity as elected Office

<b>Date of mailing (day/month/year)</b> 18 April 2001 (18.04.01)	<b>Applicant's or agent's file reference</b> 64234-88010
<b>International application No.</b> PCT/US00/20099	<b>Priority date (day/month/year)</b> 23 July 1999 (23.07.99)
<b>International filing date (day/month/year)</b> 24 July 2000 (24.07.00)	
<b>Applicant</b> MCDONNELL, William, R.	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
 23 February 2001 (23.02.01)

☐ in a notice effecting later election filed with the International Bureau on:  
 \_\_\_\_\_

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

<b>The International Bureau of WIPO</b> 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Maria Kirchner Telephone No.: (41-22) 338.83.38
--	--

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To: GLENN K. ROBBINS, II  
GREENSFELDER, HEMKER & GALE, P.C.  
2000 EQUITABLE BUILDING  
10 S. BROADWAY  
ST. LOUIS MO 63102-1774

## PCT

### NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of Mailing  
(day/month/year)

04 DEC 2001

Applicant's or agent's file reference

64234-88010

#### IMPORTANT NOTIFICATION

International application No.

PCT/US00/20099

International filing date (day/month/year)

24 JULY 2000

Priority Date (day/month/year)

23 JULY 1999

Applicant

ADVANCED AEROSPACE TECHNOLOGIES, INC.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US

Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Authorized officer

WOODROW ELDRED

Facsimile No. (703) 305-3230

Telephone No. (703) 306-4151

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To: GLENN K. ROBBINS, II  
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(PCT Rule 71.1)

Applicant's or agent's file reference <b>64234-88010</b>		Date of Mailing (day/month/year) <b>04 DEC 2001</b>	
		IMPORTANT NOTIFICATION	
International application No. <b>PCT/US00/20099</b>	International filing date (day/month/year) <b>24 JULY 2000</b>	Priority Date (day/month/year) <b>23 JULY 1999</b>	
Applicant <b>ADVANCED AEROSPACE TECHNOLOGIES, INC.</b>			

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For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer  WOODROW ELDRED
Facsimile No. (703) 305-3230	Telephone No. (703) 306-4151

10/03/925

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

REC'D 10 DEC 2001

PCT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 64234-88010	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US00/20099	International filing date (day/month/year) 24 JULY 2000	Priority date (day/month/year) 23 JULY 1999
International Patent Classification (IPC) or national classification and IPC IPC(7): B64C 25/68 and US Cl.: 244/110F, 110C, 114R		
Applicant ADVANCED AEROSPACE TECHNOLOGIES, INC.		

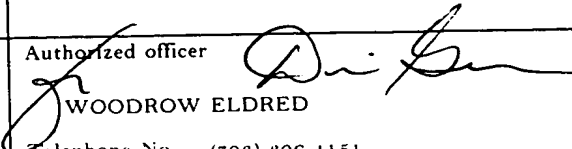
- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 4 sheets.  
☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  
These annexes consist of a total of 15 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

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MAY 31 2002

GROUP 3600

Date of submission of the demand 23 FEBRUARY 2001	Date of completion of this report 02 NOVEMBER 2001
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer  WOODROW ELDRED
Facsimile No. (703) 305-3230	Telephone No. (703) 306-4151

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/20099

## I. Basis of the report

## 1. With regard to the elements of the international application:\*

☐ the international application as originally filed☒ the description:

pages (See Attached) , as originally filed  
pages , filed with the demand  
pages , filed with the letter of

☒ the claims:

pages (See Attached) , as originally filed  
pages , as amended (together with any statement) under Article 19  
pages , filed with the demand  
pages , filed with the letter of

☒ the drawings:

pages (See Attached) , as originally filed  
pages , filed with the demand  
pages , filed with the letter of

☒ the sequence listing part of the description:

pages (See Attached) , as originally filed  
pages , filed with the demand  
pages , filed with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.  
These elements were available or furnished to this Authority in the following language which is:☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

## 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☒ The amendments have resulted in the cancellation of:☒ the description, pages NCNE☒ the claims, Nos. 1-127☒ the drawings, sheets/fig NONE5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\*Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/20099

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. statement

Novelty (N)

Claims	<u>128-208</u>	YES
Claims	<u>NONE</u>	NO

Inventive Step (IS)

Claims	<u>128-208</u>	YES
Claims	<u>NONE</u>	NO

Industrial Applicability (IA)

Claims	<u>128-208</u>	YES
Claims	<u>NONE</u>	NO

### 2. citations and explanations (Rule 70.7)

Claims 128-208 meet the criteria set out in PCT Article 33(2)-(4), because the prior art does not teach or fairly suggest the claimed aerial launch and recovery system. Specifically, the prior art fails to show the lifting apparatus with tow line and other specific apparatus used for launching and retrieving aircraft.

\_\_\_\_ NEW CITATIONS \_\_\_\_  
NONE

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US00/20099

**Supplemental B x**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

**I. BASIS OF REPORT:**

This report has been drawn on the basis of the description,  
page(s) 1-30, as originally filed.  
page(s) NONE, filed with the demand.  
and additional amendments:  
NONE

This report has been drawn on the basis of the claims,  
page(s) 32-52, as originally filed.  
page(s) NONE, as amended under Article 19.  
page(s) 52(1)-52(15), filed with the demand.  
and additional amendments:  
NONE

This report has been drawn on the basis of the drawings,  
page(s) 1-20, as originally filed.  
page(s) NONE, filed with the demand.  
and additional amendments:  
NONE

This report has been drawn on the basis of the sequence listing part of the description:  
page(s) NONE, as originally filed.  
pages(s) NONE, filed with the demand.  
and additional amendments:  
NONE

What is claimed is:

128.

An aerial launch and recovery system for an aircraft, said system comprising:

a lifting apparatus for carrying said aircraft to an elevated altitude,

a tow line connecting said lifting apparatus to a base structure,

launching means, and

5        arrestment means;

said lifting apparatus being aurally deployed from said base structure, said launching

means being adapted to carry said aircraft to said elevated altitude and release said

aircraft for flight mode, said arrestment means being adapted to capture and retain said

aircraft from mid-air flight, said tow line enabling said lifting apparatus and said captured

10       aircraft to be pulled back to said base structure.

129.

An aerial launch system for an aircraft, said system comprising:

a lifting apparatus for carrying said aircraft to an elevated altitude,

a tow line connecting said lifting apparatus to a base structure, and

launching means,

5       said launching means being adapted to carry said aircraft to said elevated altitude and

release said aircraft for flight mode.

130.

The aerial launch system of claim 129 in which said lifting apparatus is a parasail,  
said base structure comprising a transportable conveyance comprising a water craft  
capable of creating a relative wind through forward movement sufficient to provide lift to  
said parasail.



131.

The aerial launch system of claim 129 in which said launching means comprises a housing for releasably receiving said aircraft, said housing being attached below said lifting apparatus.

132.

The aerial launch system of claim 129 in which a winch is provided to facilitate aerial deployment and recovery of said tow line, said winch enabling said lifting apparatus to be maintained at variable altitudes.

133.

The aerial launch system of claim 132 in which pulleys are provided for varying the point of deployment of said tow line from said base structure.

134.

The aerial launch system of claim 129 in which said lifting apparatus is a lighter-than-air balloon.

135.

The aerial launch system of claim 130 in which said lifting apparatus is a lighter-than-air balloon in combination within a parasail.

136.

The aerial launch system of claim 129 in which said base structure is a transportable conveyance comprising a wheeled vehicle.

137.

An aerial recovery system for an aircraft, said system comprising:  
A lifting apparatus for carrying said recovery system to an elevated altitude,  
a tow line connecting said aerial apparatus to a base structure, and  
arrestment means;

- 5 said lifting apparatus being aurally deployed from said base structure, said arrestment means being adapted to capture and retain said aircraft from mid-air flight, said tow line enabling said lifting apparatus and said captured aircraft to be pulled back to said base structure.

138.

The aerial recovery system of claim 137 in which said lifting apparatus is a parasail, said base structure comprises a transportable conveyance comprising a water craft capable of creating a relative wind through forward propulsion sufficient to provide lift to said parasail.

139.

The aerial recovery system of claim 138 in which means are provided for varying a geometry of a canopy of said parasail, whereby air drag on said parasail may be controlled.

140.

The aerial recovery system of claim 137 in which said lifting apparatus is a lighter-than-air balloon.

141.

The aerial recovery system of claim 137 in which said lifting apparatus is a lighter-than-air balloon in combination within a parasail.

142.

The aerial recovery system of claim 137 in which said base structure comprises a transportable conveyance comprising a wheeled vehicle.

143.

The aerial recovery system of claim 137 in which said arrestment means comprises a hook attached to said aircraft in such a position whereby said hook is

adapted to engage an arrestment line supported by said aerial lifting apparatus as said aircraft comes into contact with said arrestment line.

144.

The aerial recovery system of claim 143 in which said arrestment line is said tow line.

145.

The aerial recovery system of claim 137 in which a hook is attached to said recovery system in such a position whereby said hook is adapted to engage an arrestment line attached to said aircraft as said aircraft comes into contact with said recovery system.

146.

The aerial recovery system of claim 137 in which a high visibility strip of material is attached to said recovery system near the point of engagement of said aircraft to said recovery system to assist the pilot in acquiring and identifying the engagement point and for guidance in maneuvering said aircraft into engagement with said recovery system.

147.

The aerial recovery system of claim 137 in which a camera is attached to said recovery system near the point of engagement of said aircraft to said recovery system, said camera pointing in the direction of said incoming aircraft so as to detect said aircraft for guidance in maneuvering said aircraft into engagement with said recovery system.

148.

The aerial recovery system of claim 137 in which said arrestment means is oriented such that said aircraft is captured from its flight path that is non-coincident.

149.

The aerial recovery system of claim 148 in which said flight path and the straight extension of said flight path does not pass vertically over said base structure.

150.

An aerial recovery system for an aircraft, said system comprising;

An arrestment cable held up at least one end,

Said aircraft contains a device for capturing said cable,

said aircraft contains structure suitable for deflecting said cable laterally into engagement

5 with said capturing device.

151.

The aerial recovery system of claim 150 where said cable is held up by a lifting apparatus.

152.

The aerial recovery system of claim 150 where said capturing device is a hook.

153.

The aerial recovery system of claim 150 where said hook has a cable retaining device.

154.

An aerial recovery system for an aircraft, said system comprising:

An arrestment cable, said cable attached at least one end to structure sufficient to

support the weight of the cable and aircraft, a hook attached to said aircraft, said

arrestment cable is deflected laterally relative to said aircraft by aircraft structure into

5 engagement with said hook.

155.

The aerial recovery system of claim 150 in which said structure is the wing.

156.

The aerial recovery system of claim 150 in which a guide spanning between an attachment on a forward portion of a fuselage section of said aircraft to said wing directs said arrestment line to said capturing device.

157.

The aerial recovery system of claim 150 in which said capturing device is positioned on a forward inboard edge of a wing of said aircraft.

158.

The aerial recovery system of claim 150 in which said capturing device is positioned on a section of a fuselage of said aircraft at a juncture of said fuselage section and a wing of said aircraft.

159.

The aerial recovery system of claim 150 in which a propeller guard deflects said arrestment cable away from the propeller.

160.

An aerial recovery system for an aircraft, said system comprising:

An arrestment cable, said cable attached at least one end to structure sufficient to support the weight of the cable and aircraft, a hook attached to said aircraft, said arrestment cable is deflected laterally relative to said aircraft by aircraft structure into  
5 engagement with said hook.

161.

The aerial recovery system of claim 160 in which said arrestment line is deflected laterally inboard relative to said aircraft.

162.

The aerial recovery system of claim 160 in which said structure is swept aft 15 degrees or more to more reliably deflect said arrestment line to said hook.

163.

The aerial recovery system of claim 161 in which said structure is swept forward 20 degrees or more to more reliably deflect said arrestment line to said hook.

164.

The aerial recovery system of claim 160 in which said wing is mounted to the fuselage of said aircraft with a pivot, said pivot having a vertical axis which allows the wing to vary its sweep relative to the fuselage.

165.

The aerial recovery system of claim 160 in which said arrestment means further comprises a harness for suspending said aircraft in a level attitude, said harness being attached to a top surface of said aircraft, said harness having a lead end attached to said hook, said hook being detachable upon engagement with said arrestment line, whereby  
5 said harness is connectable with said arrestment line through said hook to effect level attitude suspension of said aircraft.

166.

The aerial recovery system of claim 160 in which said arrestment means further comprises a pivotable arm member for suspending said aircraft in a level attitude from said arrestment line, a pivot point of said pivotable arm being attached to a top surface of said aircraft, said pivotable arm having a distal end forming said hook, said pivotable arm  
5 being pivotable from a retracted position to an erected position upon engagement of said hook with said arrestment line, whereby said pivotable arm is connectable with said arrestment line through said hook to effect level attitude suspension of said aircraft.

167.

The aerial recovery system of claim 137 in which said arrestment means comprises:

at least one arrestment line suspended below said lifting apparatus,

a hook attached to said aircraft,

5 said hook being placed in such a position whereby said hook is adapted to engage said arrestment line as said aircraft comes into contact with said arrestment line.

168.

The aerial recovery system of claim 137 in which there is an engagement point on the recovery system for contact and capture of said aircraft, a suspension cable supported by said lifting apparatus in turn supports said engagement point, a mechanism is provided to retract said suspension cable in order to raise said engagement point and said  
5 aircraft.

169.

The aerial recovery system of claim 137 in which there is an engagement point on the recovery system for contact and capture of said aircraft, a suspension cable supported by said lifting apparatus in turn supports said engagement point, a recovery line passes primarily forward from the engagement point to the base structure that is suitable for  
5 pulling said engagement point and aircraft over to said base structure.

170.

The aerial recovery system of claim 167 in which said arrestment line is suspended directly from the tow line.

171.

The aerial recovery system of claim 167 in which a plurality of arrestment lines are suspended below said lifting apparatus.

172.

The aerial recovery system of claim 171 in which at least some of said arrestment lines are suspended from said tow line.

173.

The aerial recovery system of claim 160 in which multiple arrestment lines are positioned in a parallel relationship and spaced apart at right angles to the direction of travel of said aircraft as it approaches for recovery so as to increase the lateral capture envelope of said recovery system.

174.

The aerial recovery system of claim 137 in which a winch is provided to facilitate aerial deployment and recovery of said tow line, said winch enabling said lifting apparatus to be maintained at variable altitudes.

175.

The aerial recovery system of claim 174 in which pulleys are provided for varying the point of deployment of said tow line from said base structure.

176.

A recovery system for an aircraft, said system comprising a vertically oriented arrestment line supported from a structure having sufficient height to position said arrestment line in a path of said aircraft when in flight such that said aircraft is adapted to engage said arrestment line to enable arrestment and recovery of said aircraft on said  
5 arrestment line.

177.

The recovery system of claim 176 where said structure is a boom.

178.

A recovery system for an aircraft, said system comprising a plurality of arrestment lines aligned in parallel orientation and having a spaced apart relationship to each other, said arrestment lines being supported from a structure having sufficient height to position said arrestment lines in a path of said aircraft when in flight such that  
5 said aircraft is adapted to engage at least one of said arrestment lines to enable arrestment and recovery of said aircraft on said arrestment lines.

179.

The recovery system of claim 178 in which said support structure comprises a boom, said arrestment lines being supported in a vertical orientation from said boom.



180.

The aerial recovery system of claim 137 in which said arrestment means contains a net.

181.

The aerial recovery system of claim 180 wherein said net is suspended from said tow line.

182.

The aerial recovery system of claim 180 in which said net hangs in a vertical plane.

183.

The aerial recovery system of claim 180 in which said net hangs in the plane of said tow line.

184.

An aerial recovery system for an aircraft, said system comprising:

A net, a draw string that passes around the periphery of said net and is slidably attached at points around the periphery of said net, a support system sufficient to carry the weight of the net and the aircraft, said draw string is connected to said support system  
5 and said draw string is suitable for pulling the periphery of the net together around the back of said aircraft to encapsulate said aircraft during arrestment.

185.

An aerial recovery system for an aircraft, said system comprising: an aerial apparatus for carrying said recovery system to an elevated altitude, a net to capture said aircraft, said net has at least three attach points spaced around the periphery of said net, lines attached to each of said net attach points extend up to support said net and aircraft  
5 from said aerial apparatus, the load on said lines during and after arrestment holds the net around said aircraft to help retain said aircraft.

186.

An aerial recovery system for an aircraft, said system comprising: an aerial apparatus for carrying said recovery system to an elevated altitude, a net to capture said aircraft, said net having aerodynamic drag producing fabric at the periphery of the net suitable for pulling the periphery of the net around said aircraft after engagement.

187.

An aerial recovery system, said system comprising: an aircraft, a net suspended below a support system, said support system capable of holding the weight of the net and aircraft, a hook on said aircraft positioned so as to engage a line in said net during engagement.

188.

An aerial recovery system for an aircraft, said system comprising: an aerial lifting apparatus for carrying said recovery system to an elevated altitude, a contact location on said recovery system for engagement with said aircraft, a mechanization for increasing  
5 the travel of said contact location and said aircraft during recovery relative to said aerial apparatus.

189.

The aerial recovery system of claim 188 in which said mechanization is a hanging cable capable of carrying the weight of the aircraft, said cable is above and provides the support for said contact location, said hanging cable in turn is supported at its upper end  
5 by said aerial apparatus, said cable does not carry a tow load from base structure to said aerial lifting apparatus said contact location being free to swing forward with said aircraft after engagement.

190.

The aerial recovery system of claim 188 in which said mechanization is a cable capable of carrying the weight of the aircraft, said cable prior to recovery is at right angles to the direction of travel of said aircraft and provides the support for said contact  
5 location, said cable in turn is supported at its upper end by said aerial apparatus, said contact location being capable of swinging forward with said aircraft after engagement.

191.

The aerial recovery system of Claim 188 in which said mechanization is an elastic element located in the structural load path between said contact location and said aerial apparatus.

192.

The aerial recovery system of claim 188 in which said mechanization is a sliding device located in the structural load path between said contact location and said aerial apparatus, said sliding device allowing movement of said aircraft relative to said aerial apparatus

193.

A method for launching and recovering an aircraft, said method comprising steps of:

lifting said aircraft to an elevated altitude by means of a lifting apparatus,  
connecting said lifting apparatus to a base structure by a tow line,  
5 launching said aircraft at said elevated altitude, and  
maneuvering said aircraft into arrestment means while in flight.

194.

The method for launching and recovering an aircraft of claim 193 in which said lifting apparatus is a parasail.

195.

A method for launching an aircraft, said method comprising steps of:  
lifting said aircraft to an elevated altitude by means of a lifting apparatus,  
connecting said lifting apparatus to a base structure by a tow line, and  
launching said aircraft at said elevated altitude.

196.

A method for recovering an aircraft, said method comprising steps of:  
deploying a lifting apparatus to an elevated altitude,  
connecting a lifting apparatus to a base structure by a tow line, and  
maneuvering said aircraft into arrestment means while in flight.

197.

The method for recovering an aircraft of claim 196 in which said lifting apparatus is a parasail.

198.

The method for recovering an aircraft of claim 196 in which said maneuvered aircraft is adapted to engage said recovery system while flying a non-coincident flight path.

199.

The method for recovering an aircraft of claim 196 in which said arrestment means are adapted to decrease an arrestment load placed on said aircraft during arrestment.

200.

The aerial launch and recovery system of claim 128 in which said lifting apparatus is a parasail, said base structure comprising a transportable conveyance comprising a water craft capable of creating a relative wind through forward movement sufficient to provide lift to said parasail.

201.

The aerial launch and recovery system of claim 128 in which said launching means comprises a housing for releasably receiving said aircraft, said housing being attached below said lifting apparatus.

202.

The aerial launch and recovery system of claim 128 in which said launching means comprises a housing for releasably receiving said aircraft positioned on said tow line at a point remote from said lifting apparatus.

203.

The aerial launch and recovery system of claim 128 in which said arrestment means comprises a hook attached to said aircraft in such a position whereby said hook is adapted to engage said recovery system as said aircraft comes into contact with said recovery system.

204.

The aerial launch and recovery system of claim 128 in which said arrestment means is oriented such that said aircraft is captured from its flight path that is non-coincident.

205.

The aerial launch and recovery system of claim 128 in which said recovery system utilizes a net for recovery of said aircraft.

206.

The aerial launch and recovery system of claim 128 in which said aircraft engages said recovery system at a point over said aircraft's center of gravity when said aircraft is in a level attitude thereby holding said aircraft in a level attitude.

207.

The aerial launch and recovery system of claim 203 in which said hook is positioned on a forward edge of a wing of said aircraft.

208.

The aircraft recovery system of claim 187 where said support system is a lifting apparatus.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US00/20099

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) :B64C 25/68

US CL :244/110F, 110C, 114R

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 244/110F, 110C, 114R

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	US 2,435,197 A (BRODIE) 03 February 1948 (03/02/1948), see entire document.	1, 5, 16 ----- 2-4, 6-15, 17-127
X --- Y	GB 2,219,777 A (TAYLOR) 20 December 1989 (20/12/1989), see entire document.	60, 61, 72, 96, 99, 101 ----- 2-4, 6-15, 17-59, 62-795, 97, 98, 100, 102-127
Y	US 5,054,717 A (TAYLOR) 08 October 1991 (08/10/1991), see entire document.	2-4, 6-15, 17-127

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US00/20099

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 4,301,671 A (STN SYSTEMTECHNIK NORD GMBH) 29 July 1993 (29/7/1993), see entire document.	1-127